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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,612	02/24/2005	Jurgen Martin	2002P09215WOUS	7970

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Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
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EXAMINER	
PHAN, HANH	
ART UNIT	**PAPER NUMBER**
2613	
MAIL DATE	**DELIVERY MODE**
09/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/525,612	MARTIN ET AL.	
	Examiner	Art Unit	
	Hanh Phan	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

-In the abstract section, the form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. For example, in the abstract, the phrases such as "<u>means of the polarization regulator</u>" and "<u>Said method</u>" should be avoided.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung et al (US Patent No. 6,813,021) in view of Wein et al (US Patent No. 7,106,443).

Regarding claims 10 and 19, referring to Figures 3-5, Chung et al teaches a method for determining the signal-to-noise ratio of arbitrarily polarized optical signals of different wavelength that are combined to form a wave division multiplex signal according to a polarization nulling method, comprising:

recording and storing power spectra of the wave division multiplex signal for a first defined setting m=1 (m=1, 2, . . . M) of a polarization-optical phase controller (i.e., Figs. 3 and 4, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37) ;

determining and storing a maximum deviation for the optical signals from the power spectra (i.e., Figs. 3 and 4, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37);

recording and storing the power spectra of the wave division multiplex signal for (M-1) new settings of the first polarization-optical phase controller (i.e., Figs. 3 and 4, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37);

determining and storing from the stored power spectra for each setting of the first phase controller the maximum deviations with m=1, 2 . . . (M-1) of the signals (i.e., Figs. 3 and 4, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37); and

calculating the signal-to-noise ratio for the optical signals based on all of the deviations (i.e., Figs. 3 and 4, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37).

Chung et al differs from claims 10 and 19 in that he fail to teach a first and second polarization controllers. Wein et al, from the same field of endeavor likewise teaches optical signal-to-noise monitor (Figures 3, 4 and 6-8). Wein et al further teaches a first and second polarization controllers (i.e., col. 8, lines 42-67). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the first and second polarization controllers as taught by Wein et al in the system of Chung et al. One of ordinary skill in the art would have been motivated to do this since allowing providing measuring the signal to noise ratio is rapid and accurate.

Regarding claim 11, the combination of Chung et al and Wein et al teaches the deviation of an optical signal is determined by an interpolation (i.e., Fig. 5 of Chung et al, col. 8, lines 9-22).

Regarding claim 12, the combination of Chung et al and Wein et al teaches the signal power of the optical signal is determined by an interpolation of the squared deviations (i.e., Figs. 3-5 of Chung et al, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37 and Figs. 3, 4 and 6-8 of Wein et al).

Regarding claim 13, the combination of Chung et al and Wein et al teaches a sum of the signal and noise power is determined by measuring the power at the input of a polarization controller and a noise power is determined by subtracting a determined

signal power of the optical signal (i.e., Figs. 3-5 of Chung et al, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37 and Figs. 3, 4 and 6-8 of Wein et al).

Regarding claim 14, the combination of Chung et al and Wein et al teaches the number of polarization controller settings is selected on a minimum basis depending on a specified relationship between precision determination of the signal-to-noise ratio and measurement time (i.e., Figs. 3-5 of Chung et al, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37 and Figs. 3, 4 and 6-8 of Wein et al).

Regarding claim 15, the combination of Chung et al and Wein et al teaches phase shifts between the components of an electrical field vector of an optical signal and a polarizer are performed by phase retarder plates as polarization-optical phase controllers (i.e., Figs. 3-5 of Chung et al, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37 and Figs. 3, 4 and 6-8 of Wein et al).

Regarding claim 16, the combination of Chung et al and Wein et al teaches a first phase retarder plate can be set using a first rotation angle and a second phase retarder plate can be set using a second rotation angle (i.e., Figs. 3-5 of Chung et al, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37 and Figs. 3, 4 and 6-8 of Wein et al, col. 8, lines 42-67).

Regarding claim 17, the combination of Chung et al and Wein et al teaches the settings of the first and second phase retarder plates and are implemented in such a way that a first phase shift is set for a first rotation angle and a plurality N of angles are set from which a set of N power values is recorded, from these power values a first sinusoidal interpolation curve is determined whose deviation is stored in a table, the

settings of the angles are repeated for further rotation angles with m>1 for recording further power values from which further deviations are stored and whose values are squared and interpolated with a sinusoidal curve as a function, and the signal power of the optical signal is determined from the deviation of the sinusoidal curve by the signal-to-noise ratio (OSNR) is derived for the optical signals (i.e., Figs. 3-5 of Chung et al, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37 and Figs. 3, 4 and 6-8 of Wein et al, col. 8, lines 42-67).

Regarding claim 18, the combination of Chung et al and Wein et al teaches a resolution cell with a bandwidth equal to or less than the spectral width of a channel of a WDM signal is selected to record the power values of an optical signal (i.e., Figs. 3-5 of Chung et al, col. 5, lines 44-67, col. 6, lines 1-67, col. 7, lines 1-67 and col. 8, lines 1-37 and Figs. 3, 4 and 6-8 of Wein et al, col. 8, lines 42-67).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Alexander et al (US Patent No. 5,986,782) discloses signal to noise monitoring in WDM optical communication systems.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

HANH PHAN
PRIMARY EXAMINER